LPDES PERMIT NO. LA0000868, AI No. 1514

LPDES FACT SHEET and RATIONALE
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

I. **Company/Facility Name:** MeadWestvaco South Carolina, LLC
Specialty Chemicals Division
400 Crosby Road
DeRidder, Louisiana 70634

II. **Issuing Office:** Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
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III. **Prepared By:** Sonja Loyd
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Date Prepared: December 20, 2005

IV. **Permit Action/Status:**

A. Reason For Permit Action:

Proposed reissuance of an expired Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46*.

* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401 and 405-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.2301.F, 4901, and 4903.

B. LPDES permit: Effective date - April 1, 2001
Expiration date: March 31, 2006
EPA has not retained enforcement authority.

C. Date Application Received: The permit renewal application was received by this Office on September 29, 2005. Addenda (dated October 18, 2005, and March 7, 2005) to the 2005 application was received on October 21, 2005, March 7, 2006, and March 17, 2006.

V. Facility Information:

A. Location - 400 Crosby Road in DeRidder, Beauregard Parish (Latitude 30°49'40", Longitude 93°17'06")

B. Applicant Activity - According to the application, MeadWestvaco South Carolina, LLC, Specialty Chemicals Division, is a crude tall oil refinery and rosin-based derivatives manufacturing facility. Crude tall oil received from kraft pulp and paper mill operations is fractionated into pitch, light ends, and several grades of rosins and fatty acids. Tall oil rosins and fatty acids are used in the production of resins and solution resinates that are used in the graphic arts industry. These refinery products are also used to produce varnishes, paper coatings/size, emulsifiers, plasticizers, and tackifiers to synthetic rubber producers, adhesives, paints, soaps, detergents, asphalt emulsifiers, wax compounds, and other derivatives and acid blends used in the petroleum industry. MeadWestvaco also operates an acrylic hard resin and acrylic emulsion resin manufacturing process. However, the wastewaters generated by the acrylic resin manufacturing processes are discharged to the City of DeRidder Publicly Owned Treatment Works (POTW).

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401 and 405-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Gum and Wood Chemicals	40 CFR 454, Subparts D and F

Other sources of technology-based limits:
Current LPDES permit (effective April 1, 2001)
Hydrostatic Test General Permit (LAG670000)
Best Professional Judgement

D. Fee Rate -
1. Fee Rating Facility Type: Major
2. Complexity Type: IV
3. Wastewater Type: II
4. SIC codes: 2861, 2821, and 2869

E. Continuous Facility Effluent Flow - Max 30-Day, 0.586 MGD (Current Condition); Long Term Average, 0.618 MGD (Phase I Expansion); and Long Term Average, 0.646 MGD (Phase II Expansion)

VI. Receiving Waters: Palmetto Creek

A. TSS (15%), mg/L: 5.0
B. Average Hardness, mg/L $CaCO_3$: 35.6
C. Critical Flow, cfs:
0.20 (Summer season: May - November)
0.48 (Winter season: December - April)
D. Mixing Zone Fraction: 1
E. Harmonic Mean Flow, cfs:
2.75 (Summer season: May - November)
6.58 (Winter season: December - April)
F. River Basin: Calcasieu River, Subsegment No. 030506
G. Designated Uses:
The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation

Information based on the following: LAC 33:IX Chapter 11 and memorandum from Brian Baker to Sonja Loyd dated March 20, 2006. The 15% TSS data was obtained from Monitoring Station No. 2206 located at the bridge on U.S. Highway 171, 3.9 miles south of DeRidder. The Hardness data was obtained from a sampling site north of the discharge point on LA Highway 27 near DeRidder by the permittee. The seasonal critical and harmonic mean flows are based on a memo dated February 23, 1995 (updated July 8, 1995), from Max Forbes.

VII. Outfall Information:

Outfall 001

A. Type of wastewater - Treated combined process wastewaters, utility wastewaters, miscellaneous wastewaters (comprised of wastewater generated from the following activities: storage tank and rail car washing, container washing, fire water system testing, cooling/refrigeration condensates, eyewash/safety showers, general facility washdown, steam trap condensate, and maintenance activities), hydrostatic test wastewater, and process area stormwater runoff

[NOTE: Currently, the wastewater generated by the acrylic resin manufacturing processes is discharged to the City of DeRidder POTW. However, under the Phase II Expansion, the acrylics area wastewater discharges will be discontinued and the existing acrylics area manufacturing equipment will be converted for use in the production of tall oil- based derivatives (future Specialty Process Area).

Wastewater generated from the proposed Specialty Process Area will be discharged from the wastewater treatment system via Outfall 001.]

B. Location - At the point of final effluent discharge at a point beyond Pond No. 5 prior to combining with other waters (Latitude 30°49'19", Longitude 93°17'05")

[NOTE: In the event that exceptional conditions occur at Pond No. 5, such as algae formation, the permittee may route discharges from Pond No. 4 to the final discharge point.]

C. Treatment - Coagulation, flocculation, sedimentation, dissolved air flotation, belt filtration, aerated lagoons, settling, chemical oxidation, and activated carbon (polishing)

D. Flow - Continuous, Max 30-Day, 0.586 MGD (Current Condition); Long Term Average, 0.618 MGD (Phase I Expansion), and Long Term Average, 0.646 MGD (Phase II Expansion)

E. Receiving waters - Palmetto Creek

F. Basin and subsegment - Calcasieu River Basin, Subsegment No. 030506

G. Effluent Data - The effluent data are contained in Appendix C.

Internal Outfall 101

A Type of wastewater - Hydrostatic test wastewater

B Location - At the point of discharge from the vessel or pipeline being tested prior to combining with the effluent of Outfall 001

C. Treatment - None

D. Flow - De minimis

E. Receiving waters - Palmetto Creek

F. Basin and subsegment - Calcasieu River Basin, Subsegment No. 030506

Outfall 002

A. Type of wastewater - Non-process area stormwater runoff from the northwest portion of the site

B. Location - At the first exit point of discharge from the wooded area, north of the facility, at the western plant property line prior to combining with other waters (Latitude 30°49'39", Longitude 93°17'21")

C. Treatment - None

D. Flow - Intermittent

E. Receiving waters - Palmetto Creek

F. Basin and subsegment - Calcasieu River Basin, Subsegment No. 030506

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 003

A. Type of wastewater - Non-process area stormwater runoff from the southeast portion of the site

B. Location - At the point of discharge near Pond No. 5, northeast of Outfall 001, prior to combining with other waters (Latitude 30°49'20", Longitude 93°17'02")

C. Treatment - None

D. Flow - Intermittent

E. Receiving waters - Palmetto Creek

F. Basin and subsegment - Calcasieu River Basin, Subsegment No. 030506

G. Effluent Data - The effluent data are contained in Appendix C.

VIII. Current Effluent Limits:

See Appendix E - LPDES permit limits

IX. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current LPDES Permit:

A. On or about March 3, 2003, this Office was notified by letter (dated February 28, 2003) that the permittee's name was changed from

MeadWestvaco Corporation to MeadWestvaco South Carolina, LLC, Specialty Chemicals Division, effective January 1, 2003.

B. Outfall 001

The description of wastestreams has been modified to include miscellaneous wastewaters (comprised of wastewater generated from the following activities: storage tank and rail car washing, container washing, fire water system testing, cooling/refrigeration condensates, eyewash/safety showers, general facility washdown, steam trap condensate, and maintenance activities) and hydrostatic test wastewater

The permittee's request for three (3) sets of technology-based mass limits for BOD_5 (based on the current condition, the Phase I Expansion, and the Phase II Expansion) in lieu of the previously established seasonal water quality-based mass limits has not been granted. This determination is based on the following: (1) the inclusion of the seasonal water quality-based mass limits for BOD_5 in the current LPDES permit; (2) a Water Quality Model for Palmetto Creek (dated January 21, 1986) which established seasonal water quality-based mass limits necessary for the permittee to maintain the dissolved oxygen (DO) water quality standard of 5 mg/L; (3) information indicating that the receiving stream was water quality limited for DO at the time the referenced study was performed (See February 5, 1987 EPA Fact Sheet); (4) a verbal recommendation from personnel with the Water Quality Modeling Section which indicated that an updated, LDEQ approved water quality model for Palmetto Creek needed to be performed prior to incorporating technology-based mass limits for BOD_5 into the permit; and (5) the location of the assessment site (used for the purpose of TMDL Development) with respect to the permittee's discharge point being several miles downstream on Bundicks Creek immediately above Bundicks Lake which makes it nearly impossible to detect a violation of the DO standard caused by the permittee's discharges.

A reopener clause has been added to Part II of the draft permit to allow the permit to be modified to incorporate the technology-based mass limits for BOD_5 and corresponding COD mass limits, if the results from the model demonstrate that the permittee's effluent will not cause in-stream violations of the water quality standard for DO in Palmetto Creek. The model shall be performed using the technology-based mass limits for BOD_5 listed in Appendices A-1 through A-3 as the input variables for determining the impact of its effluent on DO in Palmetto Creek. If the permittee chooses to perform the modeling, approval shall be obtained from LDEQ prior to performing modeling activities.

Three sets of technology-based mass limits for TSS have been established in the draft permit based on the permittee's current condition and projected increases in process wastewater flow which are expected to occur during the Phase I Expansion and Phase II Expansion.

Three sets of mass limits for oil and grease using the standard monthly average and daily maximum concentration limits of 10 mg/L and 15 mg/L, respectively, have been established in the draft permit. The proposed mass limits for oil and grease have been incorporated by BPJ based on the permittee's current condition and projected increases in process wastewater flow which are expected to occur during the Phase I Expansion and Phase II Expansion.

The seasonal mass limits for COD have been revised based on updates made to the COD/BOD ratios using sample data from the 2005 application. The proposed COD mass limits have been established in the draft permit by BPJ using the daily maximum and monthly average COD/BOD ratios of 12.61 and 11.20, respectively, and the seasonal water quality-based mass limits for BOD_5 from the current permit. [NOTE: If the results from the model demonstrate that the permittee's effluent will not cause in-stream violations of the water quality standard for DO in Palmetto Creek, the permittee may request that the seasonal mass limits for COD be revised to reflect mass limits based on the corresponding technology-based mass limits for BOD_5 listed in Appendices A-1 through A-3.]

Under the Phase II Expansion, the wastewater generated by the acrylic resin manufacturing processes (currently discharging to the City of DeRidder POTW) will be discontinued and the existing acrylics area manufacturing equipment will be converted for use in the production of tall oil-based derivatives (future Specialty Process Area). Wastewater generated from the proposed Specialty Process Area will be discharged from the wastewater treatment system via Outfall 001.

According to the June 8, 2000 Fact Sheet Addendum, the ammonia limits should have been removed from the current LPDES permit based on further review of EPA guidance, *Strategy of Establishing Chemical Specific Limitations for Ammonia Nitrogen Related Toxicity to Pimephales promelas*, memorandum from Phillip Jennings and Stephen Bainter to Jack Ferguson, dated February 1, 1996. Therefore, the ammonia limits have been removed from the draft permit.

Three sets of mass limits for Total Phenols (summer season only) based on the current condition, Phase I Expansion, and the Phase II Expansion have been established in the draft permit as the result of a reasonable potential analysis. The results of the reasonable

potential analysis based on the winter season for all phases does not require the inclusion of water quality-based mass limits in the draft permit. Therefore, no Total Phenol limits have been placed in the draft permit for the winter season for any of the phases.

Three sets of mass limits for Total Copper (summer and winter seasons) based on the current condition, the Phase I Expansion, and the Phase II Expansion as the result of a reasonable potential analysis have been established in the draft permit.

Monthly average and daily maximum monitoring requirements for temperature and dissolved oxygen have been added to the draft permit. These parameters were established in the 1987 NPDES permit, 1993 LWDPS permit, and 1999 Fact Sheet; however, they were inadvertently not included in the current LDPES permit.

A provision to allow the permittee to route discharges from Pond No. 4 to the final discharge point in the event that exceptional conditions occur at Pond No. 5, such as algae formation, has been added to the draft permit.

The seasonal Whole Effluent Toxicity (WET) limits and dilution series for Freshwater Chronic Biomonitoring at Outfall 001 has been changed to reflect three sets of seasonal WET limits and dilution series (summer and winter season) based on the current condition, the Phase I Expansion, and the Phase II Expansion which are as follows:

May - November (Summer season)
Current Condition - 26%, 35%, 46%, 61%, and 82% (with 82% defined as the critical dilution and/or WET limit)
Phase I Expansion - 26%, 35%, 47%, 62%, and 83% (with 83% defined as the critical dilution and/or WET limit)
Phase II Expansion - 26%, 35%, 47%, 62%, and 83% (with 83% defined as the critical dilution and/or WET limit)

December - April (Winter season)
Current Condition - 28%, 37%, 49%, 65%, and 87% (with 65% defined as the critical dilution and/or WET limit)
Phase I Expansion - 28%, 37%, 50%, 67%, and 89% (with 67% defined as the critical dilution and/or WET limit)
Phase II Expansion - 29%, 38%, 51%, 68%, and 90% (with 68% defined as the critical dilution and/or WET limit)

These seasonal WET limits and dilution series are based on recommendations from the Technical Support Section in accordance with the Permitting Guidance Document for Implementing Louisiana

Surface Water Quality Standards, LDEQ, September 27, 2001. (See Appendix D)

C. Internal Outfall 101 (hydrostatic test wastewater) has been added to the draft permit. The effluent limitations and monitoring requirements established at this internal outfall are consistent with the Hydrostatic Test Wastewater General Permit (LAG670000). The monitoring frequency is once per event using a grab sample.

D. The facility discharges to a Water Quality Act 303(d) stream. Therefore, a reopener clause has been added to Part II of the draft permit in the event that the permit requires reassessment regarding 303(d) status resulting in incorporation of the results of any modifications to the TMDL report for the receiving water body.

E. Updated Part II conditions for stormwater discharges associated with industrial activities have been established in the draft permit.

X. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfall 001 - Treated combined process wastewaters, utility wastewaters, miscellaneous wastewaters (comprised of wastewater generated from the following activities: storage tank and rail car washing, container washing, fire water system testing, cooling/refrigeration condensates, eyewash/safety showers, general facility washdown, steam trap condensate, and maintenance activities), hydrostatic test wastewater, and process area stormwater runoff

Flow (MGD)- Report, monthly average and daily maximum
DO (mg/L) - Report, monthly average and daily maximum
Temperature (°F) - Report, monthly average and daily maximum
pH (s.u.) - 6.0 - 9.0

The permittee is subject to Best Practicable Control Technology Currently Available (BPT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Gum and Wood Chemicals	40 CFR 454, Subparts D and F

Calculations, results, and documentation for the technology-based mass limits for BOD_5, COD, TSS, and Oil and Grease based on the current condition, the Phase I Expansion, and the Phase II Expansion are found in Appendices A-1 through A-4.

Site-Specific Considerations

COD Limits

Seasonal mass limits for COD have been revised based on updates made to the COD/BOD ratios using sample data from the 2005 application. The proposed COD mass limits have been established in the draft permit by BPJ using the daily maximum and monthly average COD/BOD ratios of 12.61 and 11.20, respectively, and the seasonal water quality-based mass limits for BOD_5 from the current permit. [NOTE: If the results from the model demonstrate that the permittee's effluent will not cause in-stream violations of the water quality standard for DO in Palmetto Creek, the permittee may request that the seasonal mass limits for COD be revised to reflect mass limits based on the corresponding technology-based mass limits for BOD_5 listed in Appendices A-1 through A-3.]

Oil and Grease Limits

The daily maximum and monthly average mass limits for Oil and Grease in the current permit were derived based on the 99th and 95th percentile, respectively. However, the methodology used to determine the proposed mass limits for Oil and Grease are based on BPJ using the standard daily maximum and monthly average concentration limits of 15 mg/L and 10 mg/L, respectively. Therefore, three sets of mass limits for oil and grease using the standard monthly average and daily maximum concentration limits have been established in the draft permit. The proposed mass limits for

oil and grease have been incorporated by BPJ based on the permittee's current condition and projected increases in process wastewater flow which are expected to occur during the Phase I Expansion and Phase II Expansion. See Appendices A-1 through A-3.

Temperature

Monthly average and daily maximum monitoring requirements for temperature have been added to the draft permit. These requirements were established in the 1987 NPDES permit, 1993 LWDPS permit, and 1999 Fact Sheet; however, they were inadvertently not included in the current LDPES permit.

Dissolved Oxygen

Monthly average and daily maximum monitoring requirements for dissolved oxygen have been added to the draft permit. These requirements were established in the 1987 NPDES permit, 1993 LWDPS permit, and 1999 Fact Sheet; however, they were inadvertently not included in the current LDPES permit. The permittee shall operate post aeration facilities for Outfall 001 to maintain a minimum 85% saturation of DO and in no case below 5 mg/L.

2. Internal Outfall 101 - Hydrostatic test wastewater

The hydrostatic test wastewater discharging to a discrete outfall shall receive BPJ limitations consistent with the Hydrostatic Test Wastewater General Permit (LAG670000).

Parameter	Monthly Average mg/L	Daily Maximum mg/L
Flow, MGD	Report	Report
TSS	N/A	90
TOC	N/A	50
Oil and Grease	N/A	15
Benzene	N/A	50 μg/L
Total BTEX	N/A	250 μg/L
Lead	N/A	50 μg/L

3. Outfalls 001 and 002 - Non-process area stormwater runoff

Uncontaminated or low potential contaminated stormwater discharged through discrete outfalls not associated with process wastewater shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA).

Parameter	Monthly Average mg/L	Daily Maximum mg/L
Flow, MGD	Report	Report
TOC	N/A	50
Oil and Grease	N/A	15
pH, Std. Units	6.0 (min)	9.0 (max)

Storm Water Pollution Prevention Plan (SWP3) Requirement

In accordance with LAC 33:IX.2707.I.3 and 4 [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all stormwater discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. The Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit, along with other requirements. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference into the SWP3. Examples of these type of plans include, but are not limited to: Spill Prevention Control and Countermeasure Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including BMP controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined at LAC 33:IX.2511.B.14 [(40 CFR 122.26 (b) (14)].

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Sample data from the 2005 application (Total Phenols) and March 7 and March 17, 2006 addenda (Total Copper and Total Zinc) were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation for the seasonal water quality-based mass limits (based on the current condition, the Phase I Expansion, and the Phase II Expansion) are given in Appendices B-1 through B-4.

The following pollutants received water quality-based effluent limits:

Total Phenols and Total Copper

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, BPJ, and/or are consistent with frequencies established in the current LPDES permit.

Site-Specific Considerations

The seasonal water quality-based mass limits for BOD_5 were retained in the draft permit based on the current LPDES permit; a Water Quality Model for Palmetto Creek (dated January 21, 1986) which established seasonal effluent limits necessary for the permittee to maintain the DO water quality standard of 5 mg/L; information indicating that the receiving stream was water quality limited for DO at the time the referenced study was performed (See February 5, 1987 EPA Fact Sheet); a verbal recommendation from personnel with the Water Quality Modeling Section which indicated that an updated, LDEQ approved water quality model for Palmetto Creek needed to be performed prior to incorporating technology-based mass limits for BOD_5 into the permit; and the location of the assessment site (used for the purpose of TMDL Development) with respect to the permittee's discharge point being several miles downstream on Bundicks Creek immediately above Bundicks Lake which makes it nearly impossible to detect a violation of the DO standard caused by the permittee's discharges.

The 1986 Model established seasonal water quality-based mass limits due to higher assimilative capacity of the receiving stream during cold weather conditions and the reduced efficiency of cold weather biological treatment system performance. The seasonal mass limits for BOD_5 are as follows:

	BOD5 (lbs/day)	
	Monthly Average	Daily Maximum
May - November (Summer season)	256	481
December - April (Winter season)	398	662

The current seasonal mass limits for COD that were established in the 1986 Model were based on monthly average and daily maximum COD/BOD ratios of 8.203 and 9.823, respectively.

	COD (lbs/day)	
	Monthly Average	Daily Maximum
May - November (Summer season)	2,100	4,725
December - April (Winter season)	3,256	6,503

The proposed seasonal mass limits for COD have been revised based on updates made to the COD/BOD ratios using sample data from the 2005 application. The proposed COD mass limits have been established in the draft permit by BPJ using the daily maximum and monthly average COD/BOD ratios of 12.61 and 11.20, respectively, and the seasonal water quality-based mass limits for BOD_5 from the current permit. The proposed seasonal mass limits for COD are as follows:

	COD (lbs/day) (*1)	
	Monthly Average	Daily Maximum
May - November (Summer season)	2,867	6,065
December - April (Winter season)	4,458	8,348

(*1) COD mass limits (lbs/day) derived from: BOD_5 WQ-based mass limits (lbs/day) * revised COD/BOD ratios

The seasonal water quality-based mass limits listed above are more stringent than the technology-based mass limits calculated in Appendices A-1 through A-3.

A reopener clause has been added to Part II of the draft permit to allow the permit to be modified to incorporate the technology-based mass limits for BOD_5 and corresponding COD mass limits, if the results from the model demonstrate that the permittee's effluent will not cause in-stream violations of the water quality standard for DO in Palmetto Creek. The model shall be performed using the technology-based mass limits for BOD_5 listed in Appendices A-1 through A-3 as the input variables for determining the impact of its effluent on DO in Palmetto Creek. If the permittee chooses to perform the modeling, approval shall be obtained from LDEQ prior to performing modeling activities.

TMDL Waterbody

Subsegment No. 030506 of the Calcasieu River Basin is listed on the Final 2004 Integrated 303(d) List as impaired with lead. The *Bundicks Creek TMDL for Dissolved Lead* was finalized on December 19, 2003. According to the TMDL Report, there are three point sources discharging lead into the

Bundicks Creek watershed. These facilities discharge wastewater related to cleanup of petroleum underground storage tank systems and are regulated under the LAG830000 general permit. LDEQ has established a group of reference streams located throughout the state which exhibit near-pristine characteristics and have no man-made sources discharging or contributing runoff into them. Two of the reference streams located in the Calcasieu River Basin were found to be not supporting the lead criteria during the 2000 305(b) Assessment. Therefore, LDEQ concluded that natural background loading was the dominant source of lead in Bundicks Creek. Therefore, no lead limits have been added to the draft permit.

A reopener clause has been placed in Part II of the permit to allow for more stringent or additional limitations or requirements to be placed in the permit, if needed, as a result of any modifications to the TMDL.

D. Biomonitoring Requirements

The provisions of this section apply to Outfall 001:

On or about March 28, 1994, the permittee was notified by this Office that a Toxicity Reduction Plan and Schedule needed to be submitted within 90 days after confirming lethality in accordance with LWDPS permit WP1345. On or about July 8, 1994, the permittee was notified by EPA through ORDER FOR INFORMATION Docket No. VI-94-1192 that it needed to submit a TRE Plan and Schedule within 90 days and a Final Toxicity Reduction Evaluation (TRE) Report by April 30, 1996, in accordance with NPDES permit LA0000868. Based on the Final TRE Report (dated April 30, 1996), the permittee did not identify a toxicant; however, it confirmed that its toxicity could be reduced to meet the requirements of the permit through enhanced biological treatment. Although the permittee performed upgrades to its wastewater treatment system to reduce and/or eliminate effluent toxicity, toxicity continued to both species. After review of the Final TRE Report, this Office incorporated seasonal Whole Effluent Toxicity (WET) limits (summer and winter seasons) in the current permit. Therefore, the LPDES permit is being reissued at this time, under the authority of Section 301(b)(1)(C) of the Clean Water Act, to incorporate effluent limits for whole effluent toxicity. See Appendix D for Biomonitoring Recommendation.

Whole effluent toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body, at the appropriate instream critical dilution. Pursuant to LAC 33:IX.2707.D.1.e/40 CFR 122.44(d)(1)(v), this Office has determined that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative criterion within the applicable State water quality standards, in violation of Section 101(a)(3) of the Clean Water Act. Furthermore, this Office has determined that chemical specific limitations alone are not sufficient to maintain the applicable

numeric and narrative State water quality standards. The State has established a narrative water quality criteria which, in part, states that

"No substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks due to exposure to the substances or consumption of contaminated fish or other aquatic life." (Louisiana Surface Water Quality Standards, LAC Title 33, Part IX, Chapter 11, Section 1113.B.5.) The draft permit establishes the following testing and reporting requirements:

TOXICITY TESTS	FREQUENCY
Chronic static renewal 7-day survival and reproduction test using Ceriodaphnia dubia [Method 1002.0]	1/quarter
Chronic static renewal 7-day larval survival and growth test using fathead minnow (Pimephales promelas) [Method 1000.0]	1/quarter

The monitoring frequency shall be once/quarter per species for the term of the permit.

The draft permit additionally requires the reporting of the coefficient of variation (larger of the low-flow and control dilutions) for each test species.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-89/001, March 1989." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to provide data representative of the facility's discharge in accordance with regulations listed at LAC 33:IX.2715/40 CFR 122.48 and to assure compliance with permit limitations following regulations listed at LAC 33:IX.2707.I.1/40 CFR 122.44(i)(1).

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental

Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit.

Dilution Series

The permit requires testing for two sets (summer and winter seasons) of seasonal WET limits and dilution series based on the current condition, the Phase I Expansion, and the Phase II Expansion. Each dilution series consist of five (5) dilutions in addition to the control (0% effluent) which will be used in the toxicity tests. These additional effluent concentrations and low-flow effluent concentrations (critical dilutions/WET limits) are as follows:

May - November (Summer season)
Current Condition - 26%, 35%, 46%, 61%, and 82% (with 82% defined as the critical dilution/WET limit)
Phase I Expansion - 26%, 35%, 47%, 62%, and 83% (with 83% defined as the critical dilution/WET limit)
Phase II Expansion - 26%, 35%, 47%, 62%, and 83% (with 83% defined as the critical dilution/WET limit)

December - April (Winter season)
Current Condition - 28%, 37%, 49%, 65%, and 87% (with 65% defined as the critical dilution/WET limit)
Phase I Expansion - 28%, 37%, 50%, 67%, and 89% (with 67% defined as the critical dilution/WET limit)
Phase II Expansion - 29%, 38%, 51%, 68%, and 90% (with 68% defined as the critical dilution/WET limit)

E. MONITORING FREQUENCIES

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(I)]. All monitoring frequencies are based upon best professional judgement and/or are consistent with frequencies established in the current LPDES permit.

1. Outfall 001 - Treated combined process wastewaters, utility wastewaters, miscellaneous wastewaters (comprised of wastewater generated from the following activities: storage tank and rail car washing, container washing, fire water system testing, cooling/refrigeration condensates, eyewash/safety showers, general facility washdown, steam trap condensate, and maintenance activities), hydrostatic test wastewater, and process area stormwater runoff

Flow shall be monitored continuously using a recorder. Temperature and pH shall be monitored instantaneously 2/week and 1/day, respectively, using a grab sample. The remaining pollutants are to be monitored 2/week using a grab sample. These monitoring frequencies are established by BPJ based on the 1987 NPDES permit, 1993 LWDPS permit, and/or 2001 LPDES permit.

Parameters:
BOD_5
TSS
COD
Oil and Grease
Total Phenols
Total Copper
Dissolved Oxygen
Temperature
pH

2. Internal Outfall 101 - Hydrostatic test wastewater

The hydrostatic test wastewater discharging to a discrete outfall shall receive monitoring frequencies consistent with the Hydrostatic Test Wastewater General Permit (LAG670000).

All parameters - 1/event, using a grab sample

3. Outfalls 001 and 002 - Non-process area stormwater runoff

All parameters - 1/quarter, using a grab sample when discharging

XI. Compliance History/DMR Review:

A. LDEQ records were reviewed for the period from January 2003 through December 2005. No records of compliance actions were found.

B. A DMR review of the monitoring reports for the period of January 2003 through February 2006 revealed that the facility has had the following effluent violations:

Date	Parameter	Outfall	Reported Value	Permit Limits
12/05	WET limit	TX1Q	59.2%(min)	33.3%(min)
06/05	TOC	002	68.2 mg/L(max)	50 mg/L(max)
12/04	TOC	002	129 mg/L(max)	50 mg/L(max)
05/04	T. Phenol	001	0.657 lbs/day(max)	0.57 lbs/day(max)
02/03	BOD_5	001	754.9 lbs/day(max)	662 lbs/day(max)

C. The most recent inspection was performed on December 16, 2004. The only area of concern noted in the report was a Total Phenol effluent violation at Outfall 001 found during the DMR review.

XII. "IT" Questions - Applicant's Responses

The "IT" Questions along with the permittee's responses can be found in the 2005 permit renewal application. See Appendix F.

XIII. Endangered Species:

The receiving waterbody, Subsegment No. 030506 of the Calcasieu River Basin, is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated October 21, 2005, from Watson (FWS) to Gautreaux (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

XIV. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XV. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in the application.

XVI. Variances:

No requests for variances have been received by this Office.

XVII. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page

of the fact sheetstatement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspapers of general circulation

Office of Environmental Services Public Notice Mailing List

Appendix A

Technology Spreadsheet
(Current Condition)

02/09/2006 Calculation of Technology Based Limits for MeadWestvaco (Current Condition)

(*1) TABLE 1

Permittee:	MeadWestvaco (Current Condition)
Permit Number:	LA0000868, AI No. 1514
Appendix	Appendix A-1
[] Flow Basis 1=proc, 0=all	0
Concentration flow, (MGD)	---
GL vs Old, 0=n, 1=y, 2=GL+Old	1
Outfall number	Out. 001
Deepwell fract., 40 CFR 122.50	

(*2)

OCPSF Subpart I=1, J=2	1	
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Refinery Process Area	0.072	
Post Refinery Process Area	0.0302	
Hard Resin Process Area	0.0281	
Resinates Process Area	0.0087	
Labs-R&D, QA/QC, Environmental	0.002	
Miscellaneous Activities	0.0166	
TOTAL PROCESS FLOW:	0.1576	---
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:		
MISCELLANEOUS:	MGD	gpm
Stormwater Runoff from Plant	0.1559	
Rainfall into Ponds	0.2794	
Evaporation from ponds	-0.0802	
TOTAL MISCELLANEOUS FLOWS:	0.3551	---
UTILITY WASTEWATER:	MGD	gpm
Boiler House	0.0347	
Cooling Water Pond Overflow	0.0387	
TOTAL UTILITY WW FLOWS:	0.0734	---
TOTAL OCPSF+BPJ FLOW:	0.5861	---

(*3) Fraction of OCPSF Conc. or BPJ []

Fract =0, []=1	0	BOD,avg	BOD,max	TSS,avg	TSS,max
Miscellaneous WW		0.5	0.5	0.5	0.5
Misc. WW, mg/L		5	10	10	20
Utility WW		0.25	0.25	0.25	0.25
Utility WW, mg/L		5	10	10	20
Sanitary, mg/L		30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium		
Total Copper		
Total Lead		
Total Nickel		
Total Zinc		
Total Cyanide		

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D, Thermoplastic Resins		---
E, Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		---
H, Specialty Organics		---
Total:	---	---

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio	11.2	12.61
TOC/BOD5 ratio		
COD, TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L	0.5127	0.5861

(*7)

INORGANIC GUIDELINES:

New Source 1=y 0=n	0	Prod.			OCPSF BOD5	
O Fraction=0, []=1	0	1000 lbs	Flow	Flow	OCPSF Fraction	
40 CFR 415		per day	MGD	gpm	Avg	Max
40 CFR 415.63 Mercury					1	1
40 CFR 415.63 Diaphragm					1	1
					1	1
					1	1

(*8)

OCPSF Alternate Flows:	MGD
Conventionals:	
Organic Toxics:	---
Process Waste Water	
Process Stormwater	

(*9) Page and Table Numbering

	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	0
SS Metals	0
Inorganic	0
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	1
BOD/TSS Tbl	1
Table Designation Sequence	
Pesticides &OCPSF	0
PestMetal 1=y, 0=n	0

Flow (*10) MGD COD and TOC limits, precalc

COD, Avg (lbs/day)	0
COD, Max (lbs/day)	0
TOC, Avg (lbs/day)	0
TOC, Max (lbs/day)	0

Conversion Factors:

Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

OCPSF+Inorganic 0.5861

Calculation of Technology Based Limits for MeadWestvaco (Current Condition)

Out. 001

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414	BOD5	BOD5	TSS	TSS	Prod.	Prod.	Process	Conv.	BOD5	BOD5	TSS	TSS
Subpart:	Avg	Max	Avg	Max	1000 lbs	Fraction	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L	per day	of Total	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins							---	8.34	---	---	---	---
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	---	---	---	---			---	8.34	---	---	---	---
BPJ Sources/Guidelines	BOD5	BOD5	TSS	TSS				Conv.	BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max			Flow	Factor	Avg	Max	Avg	Max
BPJ Sources:	mg/L	mg/L	mg/L	mg/L			(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Sanitary WW:							---	8.34	---	---	---	---
Miscellaneous:	---	---	---	---			0.3551	8.34	---	---	---	---
Utility Wastewater:	---	---	---	---			0.0734	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							0.4285		---	---	---	---
Other Guidelines:	BOD5	BOD5	TSS	TSS	Prod.	Flow to		Conv.	BOD5	BOD5	TSS	TSS
Inorganic	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
40 CFR 415	mg/L	mg/L	lbs/1000 lbs	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
Gum and Wood Chemicals	BOD5	BOD5	TSS	TSS	Prod.	Flow to			BOD5	BOD5	TSS	TSS
Tall Oil Rosin and	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow		Avg	Max	Avg	Max
Rosin-Based Derivative	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---		---	---	---	---
454.42, Subpart D	0.529	0.995	0.243	0.705	583.7	---			308.7773	580.7815	141.8391	411.5085
454.62, Subpart F	0.748	1.41	0.015	0.045	726.4	---			543.3472	1024.224	10.896	32.688
Other Guideline Total (lbs/day)							---		852.1245	1605.006	152.7351	444.1965
BOD5/TSS Grand Total (lbs/day)							0.4285		852.1245	1605.006	152.7351	444.1965

Calculation of Technology Based Limits for MeadWestvaco (Current Condition)

Out. 001

Non-conventional pollutant loading calculations, COD, TOC; Conventional, Oil and Grease

TABLE 3

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Guideline Subpart:	COD Avg lbs/1000	COD Max lbs/1000	TOC Avg lbs/1000	TOC Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction		Conv. Factor	COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
	---	---	---	---	---	---			---	---	---	---
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
Guideline Total									---	---	---	---
BPJ Source(s) or Flow Based Guidelines	COD Avg mg/L	COD Max mg/L	TOC Avg mg/L	TOC Max mg/L		COD Flow (MGD)	TOC Flow (MGD)	Conv. Factor	COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
BPJ Source/GL Total									---	---	---	---
COD or TOC/BOD Ratio, Source:	COD/BOD5 Ratio Avg	COD/BOD5 Ratio Max	TOC/BOD5 Ratio Avg	TOC/BOD5 Ratio Max	BOD5 limit Avg	BOD5 limit Max			COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
All sources	11.2	12.61	---	---	852.1245	1605.006			9543.794	20239.12	---	---
									---	---	---	---
Ratio Total									9543.794	20239.12	---	---
COD/TOC limits, precalc.									---	---	---	---
COD/TOC Total (lbs/day)									9543.794	20239.12	---	---
Guideline Source(s) of Oil and Grease (O&G)	O&G Avg lbs/1000	O&G Max lbs/1000	Avg lbs/1000	Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction		Conv. Factor	O&G Avg lbs/day	O&G Max lbs/day	Avg lbs/day	Max lbs/day
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
BPJ Source(s) of Oil and Grease (O&G)	O&G Avg mg/L	O&G Max mg/L	Avg mg/L	Max mg/L		O&G Flow (MGD)	Flow (MGD)	Conv. Factor	O&G Avg lbs/day	O&G Max lbs/day	Avg lbs/day	Max lbs/day
BPJ O&G Allocation	10	15	---	---		0.5861	---	8.34	48.88074	73.32111	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
O&G Total (lbs/day)									48.88074	73.32111	---	---

Calculation of Technology Based Limits for MeadWestvaco (Current Condition)

Out. 001

TABLE 4

Calculation Summary of Conventional and Non-Conventional Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Parameter	G/L-BPJ Avg. mg/L	G/L-BPJ Max mg/L	Process Flow (MGD)	G/L-BPJ Avg lbs/day	G/L-BPJ Max lbs/day	Tech Old Avg lbs/day	Tech Old Max0=no scr. 1=OldvsGL 2=Old+GL	Anti-Back lbs/day	Out. 001 Avg lbs/day	Out. 001 Max lbs/day	Out. 001 Avg mg/L	Out. 001 Max mg/L
CONVENTIONAL												
BOD5				852.1245	1605.006			---	852	1605	---	---
TSS				152.7351	444.1965			---	153	444	---	---
Oil and Grease				48.88074	73.32111			---	49	73	---	---
NON-CONVENTIONAL												
COD				9543.794	20239.12			---	9544	20239	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Parameter	G/L-BPJ Avg. mg/L	G/L-BPJ Max mg/L	Process Flow (MGD)	G/L-BPJ Avg lbs/day	G/L-BPJ Max lbs/day	Tech Old Avg lbs/day	Tech Old Max0=no scr. 1=OldvsGL 2=Old+GL	Anti-Back lbs/day	Out. 001 Avg lbs/day	Out. 001 Max lbs/day	Out. 001 Avg mg/L	Out. 001 Max mg/L
METALS AND CYANIDE												
Total Chromium				---	---			---	---	---	---	---
Total Copper				---	---			---	---	---	---	---
Total Lead				---	---			---	---	---	---	---
Total Nickel				---	---			---	---	---	---	---
Total Zinc				---	---			---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

Technology Spreadsheet
(Phase I Expansion)

02/09/2006 Calculation of Technology Based Limits for MeadWestvaco (Phase I Expansion)

(*1) TABLE 1

Permittee:	MeadWestvaco (Phase I Expansion)
Permit Number:	LA0000868, AI No. 1514
Appendix	Appendix A-2
[] Flow Basis 1=proc, 0=all	0
Concentration flow, (MGD)	---
GL vs Old, 0=n, 1=y, 2=GL+Old	1
Outfall number	Out. 001
Deepwell fract., 40 CFR 122.50	

(*2)

OCPSF Subpart I=1, J=2	1	
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Refinery Process Area	0.107	
Post Refinery Process Area	0.0306	
Hard Resin Process Area	0.0281	
Resinates Process Area	0.0087	
Labs-R&D, QA/QC, Environmental	0.002	
Miscellaneous Activities	0.0166	
TOTAL PROCESS FLOW:	0.193	---
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:		
MISCELLANEOUS:	MGD	gpm
Stormwater Runoff from Plant	0.1559	
Rainfall into Ponds	0.2794	
Evaporation from Ponds	-0.0802	
TOTAL MISCELLANEOUS FLOWS:	0.3551	---
UTILITY WASTEWATER:	MGD	gpm
Boiler House	0.0315	
Cooling Water Pond Overflow	0.0387	
TOTAL UTILITY WW FLOWS:	0.0702	---
TOTAL OCPSF+BPJ FLOW:	0.6183	---

(*3) Fraction of OCPSF Conc. or BPJ []

Fract =0, []=1 0

	BOD,avg	BOD,max	TSS,avg	TSS,max
Miscellaneous WW	0.5	0.5	0.5	0.5
Misc. WW, mg/L	5	10	10	20
Utility WW	0.25	0.25	0.25	0.25
Utility WW, mg/L	5	10	10	20
Sanitary, mg/L	30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium		
Total Copper		
Total Lead		
Total Nickel		
Total Zinc		
Total Cyanide		

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D,Thermoplastic Resins		---
E,Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		---
H, Specialty Organics		---
Total:	---	---

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio	11.2	12.61
TOC/BOD5 ratio		

COD,TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L	0.5481	0.6183

(*7) INORGANIC GUIDELINES:

New Source 1=y 0=n 0 Prod.

O Fraction=0, []=1 0 1000 lbs per day

40 CFR 415

	Flow MGD	Flow gpm	OCPSF BOD5 Fraction Avg	Max
40 CFR 415.63 Mercury			1	1
40 CFR 415.63 Diaphragm			1	1
			1	1
			1	1

(*8)

OCPSF Alternate Flows:	MGD
Conventionals:	
Organic Toxics:	---
Process Waste Water	
Process Stormwater	

(*9) Page and Table Numbering

	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	0
SS Metals	0
Inorganic	0
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	1
BOD/TSS Tbl	1
Table Designation Sequence	
Pesticides &OCPSF	0
PestMetal 1=y,0=n	0

Flow (*10)

MGD COD and TOC limits, precalc

COD,Avg (lbs/day)	0
COD,Max (lbs/day)	0
TOC,Avg (lbs/day)	0
TOC,Max (lbs/day)	0

Conversion Factors:

Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

OCPSF+Inorganic 0.6183

Calculation of Technology Based Limits for MeadWestvaco (Phase I Expansion)

Out. 001

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414 Subpart:	BOD5 Avg mg/L	BOD5 Max mg/L	TSS Avg mg/L	TSS Max mg/L	Prod. 1000 lbs per day	Prod. Fraction of Total	Process Flow (MGD)	Conv. Factor	BOD5 Avg lbs/day	BOD5 Max lbs/day	TSS Avg lbs/day	TSS Max lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins							---	8.34	---	---	---	---
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	---	---	---	---			---	8.34	---	---	---	---
BPJ Sources/Guidelines	BOD5 Avg	BOD5 Max	TSS Avg	TSS Max				Conv.	BOD5 Avg	BOD5 Max	TSS Avg	TSS Max
BPJ Sources:	mg/L	mg/L	mg/L	mg/L			Flow (MGD)	Factor	lbs/day	lbs/day	lbs/day	lbs/day
Sanitary WW:							---	8.34	---	---	---	---
Miscellaneous:	---	---	---	---			0.3551	8.34	---	---	---	---
Utility Wastewater:	---	---	---	---			0.0702	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							0.4253		---	---	---	---
Other Guidelines:	BOD5	BOD5	TSS	TSS	Prod.	Flow to		Conv.	BOD5	BOD5	TSS	TSS
Inorganic	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
40 CFR 415	mg/L	mg/L	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
Gum and Wood Chemicals	BOD5	BOD5	TSS	TSS	Prod.	Flow to			BOD5	BOD5	TSS	TSS
Tall Oil Rosin and	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow		Avg	Max	Avg	Max
Rosin-Based Derivative	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---		---	---	---	---
454.42, Subpart D	0.529	0.995	0.243	0.705	801.7	---			424.0993	797.6915	194.8131	565.1985
454.62, Subpart F	0.748	1.41	0.015	0.045	969.1	---			724.8868	1366.431	14.5365	43.6095
Other Guideline Total (lbs/day)							---		1148.986	2164.123	209.3496	608.808
BOD5/TSS Grand Total (lbs/day)							0.4253		1148.986	2164.123	209.3496	608.808

Calculation of Technology Based Limits for MeadWestvaco (Phase I Expansion)

Out. 001

Non-conventional pollutant loading calculations, COD, TOC; Conventional, Oil and Grease

TABLE 3

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Guideline Subpart:	COD Avg lbs/1000	COD Max lbs/1000	TOC Avg lbs/1000	TOC Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction		Conv. Factor	COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
	---	---	---	---	---	---			---	---	---	---
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
Guideline Total									---	---	---	---
BPJ Source(s) or Flow Based Guidelines	COD Avg mg/L	COD Max mg/L	TOC Avg mg/L	TOC Max mg/L		COD Flow (MGD)	TOC Flow (MGD)	Conv. Factor	COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
BPJ Source/GL Total									---	---	---	---
COD or TOC/BOD Ratio, Source:	COD/BOD5 Ratio Avg	COD/BOD5 Ratio Max	TOC/BOD5 Ratio Avg	TOC/BOD5 Ratio Max	BOD5 limit Avg	BOD5 limit Max			COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
All sources	11.2	12.61	---	---	1148.986	2164.123			12868.64	27289.58	---	---
									---	---	---	---
Ratio Total									12868.64	27289.58	---	---
COD/TOC limits, precalc.									---	---	---	---
COD/TOC Total (lbs/day)									12868.64	27289.58	---	---
Guideline Source(s) of Oil and Grease (O&G)	O&G Avg lbs/1000	O&G Max lbs/1000	Avg lbs/1000	Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction		Conv. Factor	O&G Avg lbs/day	O&G Max lbs/day	Avg lbs/day	Max lbs/day
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
BPJ Source(s) of Oil and Grease (O&G)	O&G Avg mg/L	O&G Max mg/L	Avg mg/L	Max mg/L		O&G Flow (MGD)	Flow (MGD)	Conv. Factor	O&G Avg lbs/day	O&G Max lbs/day	Avg lbs/day	Max lbs/day
BPJ O&G Allocation	10	15	---	---		0.6183	---	8.34	51.56622	77.34933	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
O&G Total (lbs/day)									51.56622	77.34933	---	---

Calculation of Technology Based Limits for MeadWestvaco (Phase I Expansion)

Out. 001

TABLE 4

Calculation Summary of Conventional and Non-Conventional Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Parameter	G/L-BPJ Avg.	G/L-BPJ Max	Process Flow	G/L-BPJ Avg	G/L-BPJ Max	Tech Old Avg	Tech Old Max	Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	Out. 001 Avg	Out. 001 Max	Out. 001 Avg	Out. 001 Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day		lbs/day	lbs/day	mg/L	mg/L
CONVENTIONAL												
BOD5				1148.986	2164.123			---	1149	2164	---	---
TSS				209.3496	608.808			---	209	609	---	---
Oil and Grease				51.56622	77.34933			---	52	77	---	---
NON-CONVENTIONAL												
COD				12868.64	27289.58			---	12869	27290	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Parameter	G/L-BPJ Avg.	G/L-BPJ Max	Process Flow	G/L-BPJ Avg	G/L-BPJ Max	Tech Old Avg	Tech Old Max	Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	Out. 001 Avg	Out. 001 Max	Out. 001 Avg	Out. 001 Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day		lbs/day	lbs/day	mg/L	mg/L
METALS AND CYANIDE												
Total Chromium				---	---			---	---	---	---	---
Total Copper				---	---			---	---	---	---	---
Total Lead				---	---			---	---	---	---	---
Total Nickel				---	---			---	---	---	---	---
Total Zinc				---	---			---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

Technology Spreadsheet
(Phase II Expansion)

02/09/2006 Calculation of Technology Based Limits for MeadWestvaco (Phase II Expansion)

(*1) TABLE 1

Permittee:	MeadWestvaco (Phase II Expansion)
Permit Number:	LA0000868, AI No. 1514
Appendix	Appendix A-3
[] Flow Basis 1=proc, 0=all	0
Concentration flow, (MGD)	---
GL vs Old, 0=n, 1=y, 2=GL+Old	1
Outfall number	Out. 001
Deepwell fract., 40 CFR 122.50	

(*2)

OCPSF Subpart I=1, J=2	1	
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Refinery Process Area	0.107	
Post Refinery Process Area	0.0367	
Hard Resin Process Area	0.0294	
Resinates Process Area	0.0099	
Labs-R&D, QA/QC, Environmental	0.0026	
Miscellaneous Activities	0.0166	
Specialty Process Area	0.0152	
TOTAL PROCESS FLOW:	0.2174	---
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:		
MISCELLANEOUS:	MGD	gpm
Stormwater Runoff from Plant	0.1559	
Rainfall into Ponds	0.2794	
Evaporation from Ponds	-0.0802	
TOTAL MISCELLANEOUS FLOWS:	0.3551	---
UTILITY WASTEWATER:	MGD	gpm
Boiler House	0.0349	
Cooling Water Pond Overflow	0.0387	
TOTAL UTILITY WW FLOWS:	0.0736	---
TOTAL OCPSF+BPJ FLOW:	0.6461	---

(*3) Fraction of OCPSF Conc. or BPJ []

Fract =0, []=1 0	BOD,avg	BOD,max	TSS,avg	TSS,max
Miscellaneous WW	0.5	0.5	0.5	0.5
Misc. WW, mg/L	5	10	10	20
Utility WW	0.25	0.25	0.25	0.25
Utility WW, mg/L	5	10	10	20
Sanitary, mg/L	30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium		
Total Copper		
Total Lead		
Total Nickel		
Total Zinc		
Total Cyanide		

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D, Thermoplastic Resins		---
E, Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		---
H, Specialty Organics		---
Total:	---	---

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio	11.2	12.61
TOC/BOD5 ratio		
COD, TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L	0.5725	0.6461

(*7) INORGANIC GUIDELINES:

New Source 1=y 0=n 0	Prod. 1000 lbs per day	Flow MGD	Flow gpm	OCPSF Fraction Avg	OCPSF Fraction Max
O Fraction=0, []=1 0 40 CFR 415					
40 CFR 415.63 Mercury				1	1
40 CFR 415.63 Diaphragm				1	1
				1	1
				1	1

Conversion Factors:

Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

(*8)

OCPSF Alternate Flows:	MGD
Conventionals:	
Organic Toxics:	---
Process Waste Water	
Process Stormwater	

(*9) Page and Table Numbering

	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	0
SS Metals	0
Inorganic	0
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	1
BOD/TSS Tbl	1
Table Designation Sequence	
Pesticides &OCPSF	0
PestMetal 1=y, 0=n	0

Flow (*10) MGD COD and TOC limits, precalc

COD, Avg (lbs/day)	0
COD, Max (lbs/day)	0
TOC, Avg (lbs/day)	0
TOC, Max (lbs/day)	0

OCPSF+Inorganic 0.6461

Calculation of Technology Based Limits for MeadWestvaco (Phase II Expansion)

Out. 001

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414	BOD5	BOD5	TSS	TSS	Prod.	Prod.	Process	Conv.	BOD5	BOD5	TSS	TSS
Subpart:	Avg	Max	Avg	Max	1000 lbs	Fraction	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L	per day	of Total	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins							---	8.34	---	---	---	---
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	---	---	---	---			---	8.34	---	---	---	---
BPJ Sources/Guidelines	BOD5	BOD5	TSS	TSS				Conv.	BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max			Flow	Factor	Avg	Max	Avg	Max
BPJ Sources:	mg/L	mg/L	mg/L	mg/L			(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Sanitary WW:							---	8.34	---	---	---	---
Miscellaneous:	---	---	---	---			0.3551	8.34	---	---	---	---
Utility Wastewater:	---	---	---	---			0.0736	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							0.4287		---	---	---	---
Other Guidelines:	BOD5	BOD5	TSS	TSS	Prod.	Flow to		Conv.	BOD5	BOD5	TSS	TSS
Inorganic	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
40 CFR 415	mg/L	mg/L	lbs/1000 lbs	/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
Gum and Wood Chemicals	BOD5	BOD5	TSS	TSS	Prod.	Flow to			BOD5	BOD5	TSS	TSS
Tall Oil Rosin and	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow		Avg	Max	Avg	Max
Rosin-Based Derivative	lbs/1000 lbs	/1000 lbs	/1000 lbs	/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---		---	---	---	---
454.42, Subpart D	0.529	0.995	0.243	0.705	801.7	---			424.0993	797.6915	194.8131	565.1985
454.62, Subpart F	0.748	1.41	0.015	0.045	1794	---			1341.912	2529.54	26.91	80.73
Other Guideline Total (lbs/day)							---		1766.011	3327.232	221.7231	645.9285
BOD5/TSS Grand Total (lbs/day)							0.4287		1766.011	3327.232	221.7231	645.9285

Calculation of Technology Based Limits for MeadWestvaco (Phase II Expansion)

Out. 001

Non-conventional pollutant loading calculations, COD, TOC; Conventional, Oil and Grease

TABLE 3

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Guideline Subpart:	COD Avg lbs/1000	COD Max lbs/1000	TOC Avg lbs/1000	TOC Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction		Conv. Factor	COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
	---	---	---	---	---	---			---	---	---	---
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
Guideline Total									---	---	---	---
BPJ Source(s) or Flow Based Guidelines	COD Avg mg/L	COD Max mg/L	TOC Avg mg/L	TOC Max mg/L		COD Flow (MGD)	TOC Flow (MGD)	Conv. Factor	COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
BPJ Source/GL Total									---	---	---	---
COD or TOC/BOD Ratio, Source:	COD/BOD5 Ratio Avg	COD/BOD5 Ratio Max	TOC/BOD5 Ratio Avg	TOC/BOD5 Ratio Max	BOD5 limit Avg	BOD5 limit Max			COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
All sources	11.2	12.61	---	---	1766.011	3327.232			19779.33	41956.39	---	---
									---	---	---	---
Ratio Total									19779.33	41956.39	---	---
COD/TOC limits, precalc.									---	---	---	---
COD/TOC Total (lbs/day)									19779.33	41956.39	---	---
Guideline Source(s) of Oil and Grease (O&G)	O&G Avg lbs/1000	O&G Max lbs/1000	Avg lbs/1000	Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction		Conv. Factor	O&G Avg lbs/day	O&G Max lbs/day	Avg lbs/day	Max lbs/day
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
BPJ Source(s) of Oil and Grease (O&G)	O&G Avg mg/L	O&G Max mg/L	Avg mg/L	Max mg/L		O&G Flow (MGD)	Flow (MGD)	Conv. Factor	O&G Avg lbs/day	O&G Max lbs/day	Avg lbs/day	Max lbs/day
BPJ O&G Allocation	10	15	---	---		0.6461	---	8.34	53.88474	80.82711	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
O&G Total (lbs/day)									53.88474	80.82711	---	---

Calculation of Technology Based Limits for MeadWestvaco (Phase II Expansion)

Out. 001

TABLE 4

Calculation Summary of Conventional and Non-Conventional Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Parameter	G/L-BPJ Avg. mg/L	G/L-BPJ Max mg/L	Process Flow (MGD)	G/L-BPJ Avg lbs/day	G/L-BPJ Max lbs/day	Tech Old Avg lbs/day	Tech Old Max0=no lbs/day1=OldvsGL 2=Old+GL	Anti-Back scr.	Out. 001 Avg lbs/day	Out. 001 Max lbs/day	Out. 001 Avg mg/L	Out. 001 Max mg/L
CONVENTIONAL												
BOD5				1766.011	3327.232			---	1766	3327	---	---
TSS				221.7231	645.9285			---	222	646	---	---
Oil and Grease				53.88474	80.82711			---	54	81	---	---
NON-CONVENTIONAL												
COD				19779.33	41956.39			---	19779	41956	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Parameter	G/L-BPJ Avg. mg/L	G/L-BPJ Max mg/L	Process Flow (MGD)	G/L-BPJ Avg lbs/day	G/L-BPJ Max lbs/day	Tech Old Avg lbs/day	Tech Old Max0=no lbs/day1=OldvsGL 2=Old+GL	Anti-Back scr.	Out. 001 Avg lbs/day	Out. 001 Max lbs/day	Out. 001 Avg mg/L	Out. 001 Max mg/L
METALS AND CYANIDE												
Total Chromium				---	---			---	---	---	---	---
Total Copper				---	---			---	---	---	---	---
Total Lead				---	---			---	---	---	---	---
Total Nickel				---	---			---	---	---	---	---
Total Zinc				---	---			---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

APPENDIX A-4 LA0000868, AI No. 1514

Documentation and Explanation of Technology Calculations
and Associated Lotus Spreadsheet

This a technology spreadsheet covering the following guideline: 40 CFR 454, Subpart D and F, Gum and Wood Chemicals Manufacturing Point Source Category, Tall Oil Rosin, Pitch, and Fatty Acids and Rosin-Based Derivatives Subcategories.

Regulations at 40 CFR 144(a)/LAC 33.IX.2707 require that technology-based permit limitations be placed in permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines or on a combination of the two. Best Available Technology Economically Achievable (BAT) guideline factors and concentrations are used for non-conventional and toxic pollutants. In the absence of BAT, Best Conventional Pollutant Control Technology (BCT) is used for non-conventional pollutants. In the absence of either BAT or BCT, Best Practicable Control Technology (BPT) is used for conventional and non-conventional pollutants. BPT is used for conventional pollutants. New Source Performance Standards (NSPS) are used as the situation dictates, however in the case of the OCPSF guidelines, NSPS=BAT. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. The term, "monthly average" or "average", refers to the 30-day monthly average of daily maximum values, "daily maximum" or "maximum", refers to the maximum for any one day. The term, "previous permit", refers to the most recently issued NPDES or LPDES permit. If the previous permit did not give a BPJ allowance for particular wastewater, none will be granted in the reissuance in accordance with CWA 402(o), and 40 CFR 122.44.l/LAC 33.IX.2707.L. The spreadsheet is set up in a table and column/section format. Each table represents a general category for data input or calculation points. Each reference column or section is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*10). These columns or sections represent inputs, existing data sets, calculation points, or results for determining technology based limits for an effluent of concern.

Table 1

Table 1 is the data input area for the OCPSF guidelines, Sections (*2), (*3), (*4), (*5), (*6), (*8), and (*10). There are no inorganic loading contributions for this outfall, subsequently all input/calculation areas addressing inorganic guidelines are left blank. The Page and Table numbering sequence section, Section (*9) is used for applicable guideline(s) as well as the generalized input information in Section (*1).

(*1) General input information:

Permittee - permittee name.

Permit Number- LPDES permit number.

Appendix- Appendix designation for the header.

[] Flow Basis 1=proc, 0=all- if the flow basis for concentration limits is the same as the process flow in determining mass limits, then a "1" is placed in the designated cell. A "0" indicates the total outfall

flow will be used in determining concentration based limits. See Concentration flow (MGD).

Concentration flow (MGD)- flow used for calculating concentration based limits in MGD.

GL vs Old, 0=n, 1=y, 2=GL+Old- this is the anti-backsliding (40 CFR 122.44.l, LAC 33.IX.2707.L) screening designation switch. "Old" represents the previous permit limit established by Best Professional Judgement (BPJ), which is now BAT for that facility, and "GL" represents the current guideline calculation. If the screen indicates that the previously established limitation is more stringent, but there has been an increase in production, another spreadsheet can be run giving guideline allowances for the production increase by putting a "2" in the specified cell. This cell sets a default for all anti-backsliding throughout the spreadsheet, but different options can be selected on a parameter specific basis.

Outfall number- Outfall number is placed in the designated cell, the default is "Out. 001", abbreviated due to space limitations in other portions of the spreadsheet.

Deepwell fract., 40 CFR 122.50/LAC 33:IX.2717- this applies to any situation where a discharger that falls under mass based guidelines or mass based BPJ and is discharging a portion of their wastewater to a surface water receiving stream and the remaining portion to a deepwell (most common in La.), POTW, offsite disposal, etc. The facility's mass based limitations must be reduced by the fraction of water not being discharged to the surface water receiving the discharge. Flow based guideline effluent limitations and associated BPJ will receive adjustments in their source flows.

(*2) OCPSF Flow Calculations- OCPSF flow calculations are divided into four basic categories, 1) process, 2) sanitary wastewater, 3) miscellaneous flows, and 4) utility wastewater. Additional flows may be entered as needed. Flows can either be entered as MGD or gpm units in the designated column. The process flow is used to calculate organic toxic limitations if the facility's annual production exceeds 5 million pounds per year of final product. Process flow includes flows generated by the manufacturing process, process area stormwater, and process lab water as stated in 40 CFR 414. Other flows, such as groundwater remediation wastewater, are considered as process wastewaters on a BPJ basis. Additional flows such as utility, sanitary, and miscellaneous wastewaters are used in determining additional BPJ allocations for BOD_5 and TSS limitations, but not toxics. Miscellaneous wastewater includes, but is not limited to, wastewaters from tank farms or chemical storage areas or uncontaminated stormwater. Utility wastewater includes, but is not limited to, non-contact cooling tower blowdown, boiler blowdown, filter backwash, etc.

(*3) Fraction of OCPSF Conc. or BPJ []. Utility, Miscellaneous and other wastewaters contribute BOD_5 and TSS loadings to the process outfall if these wastewaters are discharged through the process outfall. For miscellaneous wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD_5 and TSS. For utility wastewaters, a BPJ determination has been made that these wastewaters receive 25% of the production weighted OCPSF concentrations for BOD_5 and TSS. Sanitary wastewaters shall receive BOD_5 and TSS allocations of 30 mg/L, average, and 45 mg/L, maximum, as treatment equivalent to secondary treatment (LAC 33.IX.711.D). Other wastewaters shall be approached on a case-by-case basis. Anti-backsliding concerns and/or a previous permit may preclude the usage of the weighted OCPSF concentrations described above. Different BOD_5 and TSS fractions may be used as the situation dictates. If the previous permit contains other concentrations, they may be utilized instead of fractions of production weighted OCPSF concentrations.

(*4) Metal+CN Flow- The OCPSF guidelines specify that only a specific metal bearing wastestream shall receive allowances under the guideline (40 CFR 414.90, 414.100). However, through experience, it has been determined that there are several other potential sources of metals through out a facility other than from a catalyst in a metal bearing wastestream especially in an acidic wastestream. Examples of these sources include reaction vessels and equipment, piping, cooling towers, boilers, raw contaminants, etc. In consideration of these factors, the whole toxics process flow is utilized per BPJ in the calculation of metal limits unless anti-backsliding concerns (40 CFR 122.44.l, LAC 33.IX.2707.L) and/or a previous permit prescribe the use of a lesser flow. For situations where site-specific metal bearing flows (BPJ and OCPSF guideline) need to be calculated, the "Site-Specific Metal, Cyanide, and Total Residual Chlorine (TRC) Bearing Flows" table is used. Flow is entered in MGD or gpm under the specified column on the row(s) containing the metal(s) of concern.

(*5) OCPSF Guideline Subpart- BOD_5 and TSS mass limitations are calculated using a production weighted concentration. Organic chemical production figures in 1000/lbs day or production fractions of the total may be entered on the row(s) with the indicated subpart under the designated column. The production fraction will be used more frequently as many companies consider production information confidential. If a facility manufactures under only one subpart, then the production fraction shall be unity (1).

(*6) COD & TOC Ratios/COD, TOC, O&G []- Under the ratio section, it may be necessary to determine COD or TOC BPJ loadings based on BOD_5 limitations or loadings. The appropriate ratios are entered in the indicated cells. BPJ loadings for COD, TOC, and Oil and Grease (O&G) may also be determined on a concentration basis. Concentrations and flows are entered in the indicated cells. The ratios/concentrations are usually based on the previously issued permit, if one exists. If this is a new

permit issuance or major modification involving a new unit, then the ratios/concentrations are usually based on similarly permitted facilities.

(*7) Inorganic Effluent Guidelines (40 CFR 415)- Not applicable to this outfall.

(*8) OCPSF Alternate Flows- On a case-by-case basis it may be necessary to utilize an alternate flow for the calculation of the conventional pollutants BOD_5 and TSS loadings or the calculation of the organic toxic loadings. This will most commonly occur in cases where a deepwell is being eliminated. Units are in MGD.

(*9) Page and Table numbering sequence- This section shall be used for all guideline calculations and combinations. The user can specify that the spreadsheet number the pages and tables in accordance with the guidelines/tables being used. Unused pages and tables are numbered "0". This section also controls the printing of the spreadsheet; non-numbered pages are not printed.

(*10) Precalculated COD and TOC limits- Occasionally it may be necessary to incorporate a precalculated technology-based limit for TOC or COD based on DMR's or other sources, such as a previously issued permit. These values are entered in the designated cells.

Table 2

Table 2 is a calculation table for the conventional pollutant loadings of BOD_5 and TSS utilizing guidelines and BPJ.

(*1) The top portion of the table lists OCPSF subparts under 40 CFR 414. The bottom portion indicated by "Other Sources/Guidelines" lists non-guideline BPJ sources, sanitary wastewater, non-process area stormwater, miscellaneous wastewaters, utility wastewaters, under "Other Sources" and other contributing guidelines under "Other Guidelines".

(*2) Average BOD_5- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewaters typically receive a BPJ concentration consisting of 100% of the weighted concentration determined on the row labeled, "Total/Weighted[]". Different concentrations from these may be used on a case-by-case basis.

(*3) Maximum BOD_5- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewaters typically receive a BPJ concentration consisting of 100% of the weighted concentration determined on the row labeled, "Total/Weighted[]". Different concentrations from these may be used on a case-by-case basis.

(*4) Average TSS- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.

(*5) Maximum TSS- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.

(*6) Production in 1000 lbs/day- These values indicate the amount of production per subpart.

(*7) At the top of the table, Production fraction of total. These values are based on a fraction of total OCPSF production per subpart. If all OCPSF manufacturing falls under one subpart, the fraction shall be unity (1).

At the bottom of the table, Flow to Treatment Plant Fraction. Applicable to mass-based guidelines; if a portion of a process wastewater is being injected to a deepwell, POTW, or other non-surface water source, this represents the remaining fraction being discharged to the receiving water. This generally will not apply to facilities that fall exclusively under the OCPSF guidelines.

(*8) Flow- For the OCPSF guideline portion of the table (the upper portion), this is the process flow calculated in Table 1. Under "BPJ Sources/Guidelines", these are the other categorical BPJ flows calculated in Table 1. Under the "Other Guideline" section, this is the flow associated with the production under that guideline part or subpart. Flows associated with mass-based guidelines are not used in calculations.

(*9) Conversion factor- used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.

(*10) BOD_5, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*2) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD_5 loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average BOD_5.

(*11) BOD_5, Maximum, lbs/day- Similar to column (*10). See column (*10).

(*12) TSS, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*4) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD_5 loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average TSS.

(*13) TSS, Maximum, lbs/day- Similar to column (*12). See column (*12).

Table 3

Table 3 is a calculation summary table for Conventional, Non-Conventional, and Toxic limits. If there is one consolidated OCPSF metal bearing waste stream per metal and this is the only metal source, then the guideline concentrations in columns (*2) (Daily Average) and (*3) (Daily Maximum) are multiplied times the flow in column (*4) times the conversion factor of 8.34 to yield daily average and daily maximum guideline loadings in lbs/day in columns (*5) and (*6), respectively.

(*1) Parameter- The parameters are organized into three groups, Conventional, Non-Conventional, and Metals and Cyanide.

(*2) Average guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

(*3) Maximum guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

(*4) Process flow in MGD- Similar to columns (*2) and (*3), this column will be left blank unless there is one consolidated metal/cyanide bearing waste stream.

(*5) Average Guideline/BPJ effluent limitation in lbs/day. Except for the metal/cyanide situation discussed in column (*2), these values are calculated in other tables and summarized in this column.

(*6) Maximum Guideline/BPJ effluent limitation in lbs/day. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified

concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 4

Table 4 calculates the organic toxic technology effluent limitations based on BAT/NSPS established in the OCPSF guidelines, Subpart I or J as indicated. The column designations are very similar to those used for the summary table for Conventional pollutants, Non-Conventional pollutants, and Metals and Cyanide.

(*1) Parameter. The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds.

(*2) Average guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*3) Maximum guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*4) OCPSF process flow in MGD.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the

spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Daily Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Appendix B

Water Quality Screen for the Summer and Winter Seasons (Current Condition)

Developer: Bruce Fielding Time: 02:06 PM

Software: Lotus 4.0 LA0000868, AI No. 1514

Revision date: 02/14/05

Water Quality Screen for MeadWestvaco - Current Condition (Summer: May - Nov.)

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Palmetto Creek
Critical flow (Qr) cfs=	0.2
Harm. mean/avg tidal cfs=	2.75
Drinking Water=1 HHNPCR=2	
Marine, 1=y, 0=n	0
Rec. Water Hardness=	35.6
Rec. Water TSS=	5
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	MeadWestvaco - Current Condition (Summer: May - Nov.)
Permit Number=	LA0000868, AI No. 1514
Facility flow (Qef),MGD=	0.586
Outfall Number =	001
Eff. data, 2=lbs/day	1
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	
Page Numbering/Labeling	
Appendix	Appendix B-1
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	0.12926
Harm. Mean (MGD)=	1.777325
ZID Dilution =	0.978418
MZ Dilution =	0.819282
HHnc Dilution=	0.819282
HHc Dilution=	0.247956
ZID Upstream =	0.022058
MZ Upstream =	0.22058
MZhhnc Upstream=	0.22058
MZhhc Upstream=	3.032978
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.004887
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.001668
lbs/day-->ug/L Qeo	204.6145
lbs/day-->ug/L Qef	204.6145
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.819282
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	81.928%
Dilution No. 2	61.4462%
Dilution No. 3	46.0846%
Dilution No. 4	34.5635%
Dilution No. 5	25.9226%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	1.741247
Total Cadmium	4.244845
Chromium III	4.760687
Chromium VI	1
Total Copper	2.580395
Total Lead	4.863243
Total Mercury	3.314953
Total Nickel	1.978933
Total Zinc	3.025821

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	10.37434	0.480004
Chromium III	235.5064	76.39584
Chromium VI	15.712	10.582
Copper	6.96322	5.082216
Lead	20.64166	0.804376
Mercury	1.734	0.012
Nickel	590.7556	65.60815
Zinc	47.70341	43.56045

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic Parameters	Instream Conc. ug/L	CuEffluent /Tech (Avg) ug/L	Effluent /Tech (Max) ug/L	MQL ug/L	Effluent 95th % 1=No 0=95 %	estimate Non-Tech ug/L	Numerical Criteria Acute FW ug/L	Chronic FW ug/L	HHNDW ug/L	HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)		74	124	5	1		700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol,				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10			591.6758	261.1871		
Total Cadmium				1			44.03747	2.037541		
Chromium III				10			1121.172	363.6967		
Chromium VI				10			15.712	10.582		
Total Copper		9		10	1		17.96786	13.11412		
Total Lead				5			100.3854	3.911875		
Total Mercury				0.2			5.748129	0.039779		
Total Nickel				40			1169.066	129.8342		
Total Zinc		47.9		20	1		144.342	131.8061		
Total Cyanide				20			45.9	5.2	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				1.0E-005					7.2E-007	C
VOLATILE COMPOUNDS										
Benzene				10			2249	1125	12.5	C
Bromoform				10			2930	1465	34.7	C
Bromodichloromethane				10					3.3	C
Carbon Tetrachloride				10			2730	1365	1.2	C
Chloroform				10			2890	1445	70	C
Dibromochloromethane				10					5.08	C
1,2-Dichloroethane				10			11800	5900	6.8	C
1,1-Dichloroethylene				10			1160	580	0.58	C
1,3-Dichloropropylene				10			606	303	162.79	
Ethylbenzene				10			3200	1600	8100	
Methyl Chloride				50			55000	27500		
Methylene Chloride				20			19300	9650	87	C
1,1,2,2-Tetrachloro-ethane				10			932	466	1.8	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 001	(*20) WQBL Max 001	(*21) WQBL Avg 001	(*22) WQBL Max 001	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	715.4406	427.2031	61.02901	228.941	226.4176	61.02901	61.02901	61.02901	145.249	0.298263	0.709867	yes
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	391.4482	234.3514	---	125.2634	124.2062	---	124.2062	162.7102	386.2814	0.795204	1.88785	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	604.727	318.7998	---	193.5127	168.9639	---	168.9639	221.3427	525.4777	1.081755	2.568136	no
Total Cadmium	45.00885	2.486982	---	14.40283	1.3181	---	1.3181	1.726712	4.099292	0.008439	0.020034	no
Chromium III	1145.903	443.9209	---	366.689	235.2781	---	235.2781	308.2143	731.7149	1.506317	3.576066	no
Chromium VI	16.05858	12.91618	---	5.138744	6.845575	---	5.138744	6.731755	15.98149	0.0329	0.078105	no
Total Copper	18.36419	16.00684	---	5.876541	8.483624	---	5.876541	7.698269	18.27604	0.037623	0.089319	yes
Total Lead	102.5997	4.774757	---	32.8319	2.530621	---	2.530621	3.315114	7.870232	0.016202	0.038464	no
Total Mercury	5.874921	0.048554	---	1.879975	0.025734	---	0.025734	0.033711	0.080032	0.000165	0.000391	no
Total Nickel	1194.853	158.473	---	382.3531	83.99069	---	83.99069	110.0278	261.2111	0.537732	1.276601	no
Total Zinc	147.5259	160.8799	---	47.20828	85.26636	---	47.20828	61.84284	146.8177	0.302241	0.717534	no
Total Cyanide	46.91246	6.347017	15677.13	15.01199	3.363919	15677.13	3.363919	4.406734	10.46179	0.021537	0.051129	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000003	---	---	0.000003	0.000003	0.000003	0.000007	1.4E-008	3.4E-008	no
VOLATILE COMPOUNDS												
Benzene	2298.608	1373.153	50.41222	735.5547	727.7709	50.41222	50.41222	50.41222	119.9811	0.246377	0.586376	no
Bromoform	2994.63	1788.15	139.9443	958.2816	947.7195	139.9443	139.9443	139.9443	333.0675	0.683942	1.627781	no
Bromodichloromethane	---	---	13.30883	---	---	13.30883	13.30883	13.30883	31.67501	0.065043	0.154803	no
Carbon Tetrachloride	2790.218	1666.092	4.839573	892.8699	883.0287	4.839573	4.839573	4.839573	11.51818	0.023652	0.056292	no
Chloroform	2953.748	1763.738	282.3084	945.1993	934.7813	282.3084	282.3084	282.3084	671.8941	1.379709	3.283708	no
Dibromochloromethane	---	---	20.48753	---	---	20.48753	20.48753	20.48753	48.76031	0.100127	0.238303	no
1,2-Dichloroethane	12060.28	7201.423	27.42425	3859.291	3816.754	27.42425	27.42425	27.42425	65.26971	0.134029	0.318989	no
1,1-Dichloroethylene	1185.587	707.9365	2.339127	379.3879	375.2064	2.339127	2.339127	2.339127	5.567123	0.011432	0.027208	no
1,3-Dichloropropylene	619.3672	369.8358	198.6983	198.1975	196.013	198.6983	196.013	256.777	609.6004	1.254931	2.979263	no
Ethylbenzene	3270.586	1952.928	9886.7	1046.587	1035.052	9886.7	1035.052	1355.918	3219.012	6.626697	15.73208	no
Methyl Chloride	56213.19	33565.96	---	17988.22	17789.96	---	17789.96	23304.84	55326.76	113.8964	270.3952	no
Methylene Chloride	19725.72	11778.6	350.8691	6312.23	6242.657	350.8691	350.8691	350.8691	835.0684	1.714781	4.08118	no
1,1,2,2-Tetrachloro-ethane	952.5581	568.7904	7.25936	304.8186	301.4589	7.25936	7.25936	7.25936	17.27728	0.035478	0.084438	no

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	Cu	Effluent	Effluent	MQL	Effluent	95th %	Numerical Criteria			HH
Parameters	Instream	/Tech	/Tech		1=No 95%	estimate	Acute	Chronic	HHNDW	Carcinogen
	Conc.	(Avg)	(Max)		0=95 %	Non-Tech	FW	FW		Indicator
	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	"C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene				10			1290	645	2.5	C
Toluene				10			1270	635	46200	
1,1,1-Trichloroethane				10			5280	2640		
1,1,2-Trichloroethane				10			1800	900	6.9	C
Trichloroethylene				10			3900	1950	21	C
Vinyl Chloride				10					35.8	C
ACID COMPOUNDS										
2-Chlorophenol				10			258	129	126.4	
2,4-Dichlorophenol				10			202	101	232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250	125	0.00017	C
Hexachlorobenzene				10					0.00025	C
Hexachlorabutadiene				10			5.1	1.02	0.11	C
PESTICIDES										
Aldrin				0.05			3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.05			5.3	0.21	0.2	C
Chlordane				0.2			2.4	0.0043	0.00019	C
4,4'-DDT				0.1			1.1	0.001	0.00019	C
4,4'-DDE				0.1			52.5	10.5	0.00019	C
4,4'-DDD				0.1			0.03	0.006	0.00027	C
Dieldrin				0.1			0.2374	0.0557	0.00005	C
Endosulfan				0.1			0.22	0.056	0.64	
Endrin				0.1			0.0864	0.0375	0.26	
Heptachlor				0.05			0.52	0.0038	0.00007	C
Toxaphene				5			0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic	WLAa	WLAc	WLAh	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL	Need
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	MaxWQBL?	
								001	001	001	001	
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1318.455	787.2742	10.08244	421.9056	417.2553	10.08244	10.08244	10.08244	23.99622	0.049275	0.117275	no
Toluene	1298.014	775.0684	56390.81	415.3644	410.7863	56390.81	410.7863	538.13	1277.545	2.629971	6.24367	no
1,1,1-Trichloroethane	5396.466	3222.332	---	1726.869	1707.836	---	1707.836	2237.265	5311.369	10.93405	25.95794	no
1,1,2-Trichloroethane	1839.704	1098.522	27.82755	588.7054	582.2168	27.82755	27.82755	27.82755	66.22956	0.136	0.32368	no
Trichloroethylene	3986.026	2380.131	84.69253	1275.528	1261.47	84.69253	84.69253	84.69253	201.5682	0.413913	0.985112	no
Vinyl Chloride	---	---	144.3806	---	---	144.3806	144.3806	144.3806	343.6258	0.705623	1.679382	no
ACID COMPOUNDS												
2-Chlorophenol	263.691	157.4548	154.2813	84.38111	83.45107	154.2813	83.45107	109.3209	259.5328	0.534277	1.268399	no
2,4-Dichlorophenol	206.4557	123.2786	283.907	66.06583	65.33766	283.907	65.33766	85.59233	203.2001	0.41831	0.993088	no
BASE NEUTRAL COMPOUNDS												
Benzidine	255.5145	152.5725	0.000686	81.76464	80.86344	0.000686	0.000686	0.000686	0.001632	0.000003	0.000008	no
Hexachlorobenzene	---	---	0.001008	---	---	0.001008	0.001008	0.001008	0.0024	0.000005	0.000012	no
Hexachlorabutadiene	5.212496	1.244992	0.443628	1.667999	0.659846	0.443628	0.443628	0.443628	1.055834	0.002168	0.00516	no
PESTICIDES												
Aldrin	3.066174	---	0.001613	0.981176	---	0.001613	0.001613	0.001613	0.003839	0.000008	0.000019	no
Hexachlorocyclohexane (gamma BHC, Lindane)	5.416908	0.256322	0.806596	1.73341	0.135851	0.806596	0.135851	0.177964	0.422495	0.00087	0.002065	no
Chlordane	2.452939	0.005248	0.000766	0.784941	0.002782	0.000766	0.000766	0.000766	0.001824	0.000004	0.000009	no
4,4'-DDT	1.124264	0.001221	0.000766	0.359764	0.000647	0.000766	0.000647	0.000847	0.002012	0.000004	0.00001	no
4,4'-DDE	53.65805	12.81609	0.000766	17.17057	6.792529	0.000766	0.000766	0.000766	0.001824	0.000004	0.000009	no
4,4'-DDD	0.030662	0.007323	0.001089	0.009812	0.003881	0.001089	0.001089	0.001089	0.002592	0.000005	0.000013	no
Dieldrin	0.242637	0.067986	0.000202	0.077644	0.036033	0.000202	0.000202	0.000202	0.00048	9.9E-007	0.000002	no
Endosulfan	0.224853	0.068352	0.781171	0.071953	0.036227	0.781171	0.036227	0.047457	0.112665	0.000232	0.000551	no
Endrin	0.088306	0.045772	0.317351	0.028258	0.024259	0.317351	0.024259	0.031779	0.075446	0.000155	0.000369	no
Heptachlor	0.53147	0.004638	0.000282	0.17007	0.002458	0.000282	0.000282	0.000282	0.000672	0.000001	0.000003	no
Toxaphene	0.746102	0.000244	0.000968	0.238753	0.000129	0.000968	0.000129	0.000169	0.000402	8.3E-007	0.000002	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	19.4191	13.42638	---	6.214113	7.115983	---	6.214113	8.140488	19.32589	0.039785	0.09445	no
Ammonia	---	4882.321	---	---	2587.63	---	2587.63	3389.795	8047.529	16.56674	39.33021	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding Time: 02:05 PM

Software: Lotus 4.0 LA0000868, AI No. 1514

Revision date: 02/14/05

Water Quality Screen for MeadWestvaco - Current Condition (Winter: Dec.-April)

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Palmetto Creek
Critical flow (Qr) cfs=	0.48
Harm. mean/avg tidal cfs=	6.58
Drinking Water=1 HHNPCR=2	
Marine, 1=y, 0=n	0
Rec. Water Hardness=	35.6
Rec. Water TSS=	5
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	MeadWestvaco - Current Condition (Winter: Dec.-April)
Permit Number=	LA0000868, AI No. 1514
Facility flow (Qef),MGD=	0.586
Outfall Number =	001
Eff. data, 2=lbs/day	1
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	

Page Numbering/Labeling

Appendix	Appendix B-1
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	0.310224
Harm. Mean (MGD)=	4.252654
ZID Dilution =	0.949722
MZ Dilution =	0.653854
HHnc Dilution=	0.653854
HHc Dilution=	0.121108
ZID Upstream =	0.052939
MZ Upstream =	0.529392
MZhhnc Upstream=	0.529392
MZhhnc Upstream=	7.257089
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.004887
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.004003
lbs/day-->ug/L Qeo	204.6145
lbs/day-->ug/L Qef	204.6145
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.653854
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	87.181%
Dilution No. 2	65.3854%
Dilution No. 3	49.0391%
Dilution No. 4	36.7793%
Dilution No. 5	27.5845%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	1.741247
Total Cadmium	4.244845
Chromium III	4.760687
Chromium VI	1
Total Copper	2.580395
Total Lead	4.863243
Total Mercury	3.314953
Total Nickel	1.978933
Total Zinc	3.025821

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	10.37434	0.480004
Chromium III	235.5064	76.39584
Chromium VI	15.712	10.582
Copper	6.96322	5.082216
Lead	20.64166	0.804376
Mercury	1.734	0.012
Nickel	590.7556	65.60815
Zinc	47.70341	43.56045

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	Cu	Effluent	Effluent	MQL	Effluent 95th %		Numerical Criteria			HH
Parameters	Instream	/Tech	/Tech		1=No 95%	estimate	Acute	Chronic	HHNDW	Carcinogen
	Conc.	(Avg)	(Max)		0=95 %	Non-Tech	FW	FW		Indicator
	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	"C"
NONCONVENTIONAL										
Total Phenols (4AAP)		74	124	5	1		700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10			591.6758	261.1871		
Total Cadmium				1			44.03747	2.037541		
Chromium III				10			1121.172	363.6967		
Chromium VI				10			15.712	10.582		
Total Copper		9		10	1		17.96786	13.11412		
Total Lead				5			100.3854	3.911875		
Total Mercury				0.2			5.748129	0.039779		
Total Nickel				40			1169.066	129.8342		
Total Zinc		47.9		20	1		144.342	131.8061		
Total Cyanide				20			45.9	5.2	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						7.2E-007	C
VOLATILE COMPOUNDS										
Benzene				10			2249	1125	12.5	C
Bromoform				10			2930	1465	34.7	C
Bromodichloromethane				10					3.3	C
Carbon Tetrachloride				10			2730	1365	1.2	C
Chloroform				10			2890	1445	70	C
Dibromochloromethane				10					5.08	C
1,2-Dichloroethane				10			11800	5900	6.8	C
1,1-Dichloroethylene				10			1160	580	0.58	C
1,3-Dichloropropylene				10			606	303	162.79	
Ethylbenzene				10			3200	1600	8100	
Methyl Chloride				50			55000	27500		
Methylene Chloride				20			19300	9650	87	C
1,1,2,2-Tetrachloro-ethane				10			932	466	1.8	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 001	(*20) WQBL Max 001	(*21) WQBL Avg 001	(*22) WQBL Max 001	(*23) WQBL Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	737.0575	535.2874	76.46962	235.8584	283.7023	76.46962	76.46962	76.46962	181.9977	0.373725	0.889466	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	403.2757	293.6434	---	129.0482	155.631	---	129.0482	169.0532	401.34	0.826203	1.961445	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	622.9987	399.4576	---	199.3596	211.7125	---	199.3596	261.1611	620.0083	1.276357	3.030129	no
Total Cadmium	46.36878	3.1162	---	14.83801	1.651586	---	1.651586	2.163577	5.136432	0.010574	0.025103	no
Chromium III	1180.526	556.2349	---	377.7684	294.8045	---	294.8045	386.1939	916.842	1.887422	4.480827	no
Chromium VI	16.54378	16.18403	---	5.29401	8.577537	---	5.29401	6.935153	16.46437	0.033894	0.080465	no
Total Copper	18.91906	20.05664	---	6.0541	10.63002	---	6.0541	7.93087	18.82825	0.03876	0.092018	yes
Total Lead	105.6997	5.982792	---	33.82391	3.17088	---	3.17088	4.153852	9.861436	0.020301	0.048195	no
Total Mercury	6.05243	0.060838	---	1.936778	0.032244	---	0.032244	0.04224	0.10028	0.000206	0.00049	no
Total Nickel	1230.956	198.5674	---	393.9058	105.2407	---	105.2407	137.8653	327.2986	0.673781	1.599587	no
Total Zinc	151.9833	201.5833	---	48.63466	106.8391	---	48.63466	63.71141	151.2538	0.311373	0.739214	no
Total Cyanide	48.32991	7.952841	19643.52	15.46557	4.215006	19643.52	4.215006	5.521657	13.10867	0.026986	0.064065	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000006	---	---	0.000006	0.000006	0.000006	0.000014	2.9E-008	6.9E-008	no
VOLATILE COMPOUNDS												
Benzene	2368.06	1720.567	103.2136	757.7793	911.9003	103.2136	103.2136	103.2136	245.6484	0.50443	1.200543	no
Bromoform	3085.112	2240.56	286.521	987.2358	1187.497	286.521	286.521	286.521	681.9199	1.400297	3.332706	no
Bromodichloromethane	---	---	27.24839	---	---	27.24839	27.24839	27.24839	64.85117	0.133169	0.316943	no
Carbon Tetrachloride	2874.524	2087.621	9.908506	919.8477	1106.439	9.908506	9.908506	9.908506	23.58225	0.048425	0.115252	no
Chloroform	3042.994	2209.972	577.9962	973.7582	1171.285	577.9962	577.9962	577.9962	1375.631	2.824806	6.723039	no
Dibromochloromethane	---	---	41.94601	---	---	41.94601	41.94601	41.94601	99.83151	0.205	0.487901	no
1,2-Dichloroethane	12424.68	9023.416	56.1482	3975.899	4782.41	56.1482	56.1482	56.1482	133.6327	0.27441	0.653095	no
1,1-Dichloroethylene	1221.41	887.0476	4.789111	390.851	470.1353	4.789111	4.789111	4.789111	11.39809	0.023406	0.055705	no
1,3-Dichloropropylene	638.0812	463.4059	248.9698	204.186	245.6051	248.9698	204.186	267.4836	635.0184	1.307257	3.103487	no
Ethylbenzene	3369.406	2447.028	12388.08	1078.21	1296.925	12388.08	1078.21	1412.455	3353.232	6.903006	16.38805	no
Methyl Chloride	57911.66	42058.29	---	18531.73	22290.9	---	18531.73	24276.57	57633.68	118.6454	281.6696	no
Methylene Chloride	20321.73	14758.64	718.3667	6502.953	7822.078	718.3667	718.3667	718.3667	1709.713	3.510831	8.355777	no
1,1,2,2-Tetrachloro-ethane	981.3394	712.6969	14.86276	314.0286	377.7294	14.86276	14.86276	14.86276	35.37337	0.072638	0.172878	no

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic		CuEffluent	Effluent	MQLEffluent	95th %		Numerical Criteria			HH
Parameters	Instream	/Tech	/Tech	1=No	95%	estimate	Acute	Chronic	HHNDW	Carcinogen
	Conc.	*(Avg)*	*(Max)*	*0=95 %*		*Non-Tech*	*FW*	*FW*		*Indicator*
	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	"C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene				10			1290	645	2.5	C
Toluene				10			1270	635	46200	
1,1,1-Trichloroethane				10			5280	2640		
1,1,2-Trichloroethane				10			1800	900	6.9	C
Trichloroethylene				10			3900	1950	21	C
Vinyl Chloride				10					35.8	C
ACID COMPOUNDS										
2-Chlorophenol				10			258	129	126.4	
2,4-Dichlorophenol				10			202	101	232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250	125	0.00017	C
Hexachlorobenzene				10					0.00025	C
Hexachlorabutadiene				10			5.1	1.02	0.11	C
PESTICIDES										
Aldrin				0.05			3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.05			5.3	0.21	0.2	C
Chlordane				0.2			2.4	0.0043	0.00019	C
4,4'-DDT				0.1			1.1	0.001	0.00019	C
4,4'-DDE				0.1			52.5	10.5	0.00019	C
4,4'-DDD				0.1			0.03	0.006	0.00027	C
Dieldrin				0.1			0.2374	0.0557	0.00005	C
Endosulfan				0.1			0.22	0.056	0.64	
Endrin				0.1			0.0864	0.0375	0.26	
Heptachlor				0.05			0.52	0.0038	0.00007	C
Toxaphene				5			0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic Parameters	WLAa Acute	WLAc Chronic	WLAh HHNDW	LTAa Acute	LTAc Chronic	LTAh HHNDW	Limiting A,C,HH	WQBL Avg 001	WQBL Max 001	WQBL Avg 001	WQBL Max 001	WQBL Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1358.292	986.4582	20.64272	434.6533	522.8228	20.64272	20.64272	20.64272	49.12968	0.100886	0.240109	no
Toluene	1337.233	971.1642	70657.93	427.9145	514.717	70657.93	427.9145	560.568	1330.814	2.73963	6.504008	no
1,1,1-Trichloroethane	5559.519	4037.596	---	1779.046	2139.926	---	1779.046	2330.55	5532.834	11.38996	27.04029	no
1,1,2-Trichloroethane	1895.291	1376.453	56.97391	606.493	729.5202	56.97391	56.97391	56.97391	135.5979	0.278445	0.6627	no
Trichloroethylene	4106.463	2982.315	173.3989	1314.068	1580.627	173.3989	173.3989	173.3989	412.6893	0.847442	2.016912	no
Vinyl Chloride	---	---	295.6038	---	---	295.6038	295.6038	295.6038	703.537	1.444687	3.438354	no
ACID COMPOUNDS												
2-Chlorophenol	271.6583	197.2916	193.3152	86.93066	104.5646	193.3152	86.93066	113.8792	270.3544	0.556555	1.321287	no
2,4-Dichlorophenol	212.6937	154.4686	355.7367	68.06199	81.86838	355.7367	68.06199	89.16121	211.6728	0.435752	1.034496	no
BASE NEUTRAL COMPOUNDS												
Benzidine	263.2348	191.1741	0.001404	84.23514	101.3223	0.001404	0.001404	0.001404	0.003341	0.000007	0.000016	no
Hexachlorobenzene	---	---	0.002064	---	---	0.002064	0.002064	0.002064	0.004913	0.00001	0.000024	no
Hexachlorabutadiene	5.36999	1.55998	0.90828	1.718397	0.82679	0.90828	0.82679	1.083094	2.571316	0.005293	0.012567	no
PESTICIDES												
Aldrin	3.158818	---	0.003303	1.010822	---	0.003303	0.003303	0.003303	0.007861	0.000016	0.000038	no
Hexachlorocyclohexane (gamma BHC, Lindane)	5.580578	0.321172	1.651418	1.785785	0.170221	1.651418	0.170221	0.22299	0.529389	0.00109	0.002587	no
Chlordane	2.527054	0.006576	0.001569	0.808657	0.003485	0.001569	0.001569	0.001569	0.003734	0.000008	0.000018	no
4,4'-DDT	1.158233	0.001529	0.001569	0.370635	0.000811	0.001569	0.000811	0.001062	0.002521	0.000005	0.000012	no
4,4'-DDE	55.27931	16.05862	0.001569	17.68938	8.511069	0.001569	0.001569	0.001569	0.003734	0.000008	0.000018	no
4,4'-DDD	0.031588	0.009176	0.002229	0.010108	0.004863	0.002229	0.002229	0.002229	0.005306	0.000011	0.000026	no
Dieldrin	0.249968	0.085187	0.000413	0.07999	0.045149	0.000413	0.000413	0.000413	0.000983	0.000002	0.000005	no
Endosulfan	0.231647	0.085646	0.978811	0.074127	0.045392	0.978811	0.045392	0.059464	0.14117	0.000291	0.00069	no
Endrin	0.090974	0.057352	0.397642	0.029112	0.030397	0.397642	0.029112	0.038136	0.090537	0.000186	0.000442	no
Heptachlor	0.547528	0.005812	0.000578	0.175209	0.00308	0.000578	0.000578	0.000578	0.001376	0.000003	0.000007	no
Toxaphene	0.768646	0.000306	0.001982	0.245967	0.000162	0.001982	0.000162	0.000212	0.000504	0.000001	0.000002	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	20.00585	16.82332	---	6.401871	8.916358	---	6.401871	8.386451	19.90982	0.040987	0.097304	no
Ammonia	---	6117.57	---	---	3242.312	---	3242.312	4247.429	10083.59	20.7582	49.28093	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no